

IN THE CLAIMS

Claims 31 – 46 are pending.

Please cancel claim 32 without prejudice or disclaimer of the subject matter claimed therein.

Please amend claims 31 and 41 as follows:

31. A method of determining the sequence of a target nucleic acid in a sample, comprising the steps of:

- (a) providing at least one solid phase particle having a transponder, the particle having an oligonucleotide probe attached directly or indirectly to an outer surface, and the transponder comprising of memory elements containing data indicating the sequence of the oligonucleotide probe, a radio-frequency transmitter and a photovoltaic cell, wherein the memory elements and transmitter are powered only when the photovoltaic cell is illuminated by laser light;
- (b) contacting the solid phase particle with the sample to form a sample mixture;
- (c) providing conditions allowing annealing of at least a portion of the sequence of the target nucleic acid to a complementary sequence on the oligonucleotide probe;

- (d) illuminating the solid phase particle with laser light to detect the presence of a fluorescent label indicative of binding of at least a portion of the sequence of the target nucleic acid to the oligonucleotide probe;
- (e) decoding the data on the memory elements to identify the sequence of the oligonucleotide probe; and
- (f) analyzing the sequence of the oligonucleotide probe to which target nucleic acid is bound to determine at least a portion of the sequence of the target nucleic acid.

41. A method of determining the sequence of target nucleic acid thought to contain a plurality of subsequences, comprising the steps of:

- (a) providing at least two populations of solid phase particles, each particle comprising an oligonucleotide probe corresponding to one of the subsequences, attached directly or indirectly to an outer surface of the particle, and a transponder comprising memory elements containing data indicating the sequence of the attached oligonucleotide probe, a radio-frequency transmitter and a photovoltaic cell, wherein the memory elements and transmitter are powered only when the photovoltaic cell is illuminated by laser light; and wherein a first population of solid phase particles has a

- different oligonucleotide probe sequence than a second population of solid phase particles;
- (b) combining the sample and the at least two populations of the solid phase particles;
 - (c) providing conditions allowing annealing of at least a portion of the sequence of the target nucleic acid to complementary sequences on the oligonucleotide probes;
 - (d) illuminating the solid phase particles with laser light to detect the presence of a fluorescent label indicative of binding of at least a portion of the target nucleic acid to the oligonucleotide probes; and
 - (e) decoding the memory elements to identify the sequence of the oligonucleotide probes; and
 - (f) analyzing the sequence of the oligonucleotide probes to which target nucleic acid is bound to determine at least a portion of the sequence of the target nucleic acid.

Claims 31 and 33 – 46 are pending.